vehement and emphatical, and always attended with ſtrong Geſticulations. They are generally well proportioned, and for the moſt part are rather taller than the *Engliſh*. They have all either a very dark-brown Hair, that may well be called black, or a Jet-black, all lank.

II. *An* Experiment *to prove, that* Water, *when agitated by* Fire, *is infinitely more* elaſtic *than* Air *in the ſame Circumſtances; by the late Rev*^{d} John Clayton, *Dean of* Kildare *in* Ireland. *Communicated by the ſame Hand as the preceding.*

—SIR *Thomas Proby* having heard of a new Digeſter, which I contrived, had a Deſire to ſee it, and ſome Experiments made therein. I had a ſmall one, which I deſigned only for an inward Cylinder; this I could eaſily put in my Pocket: Wherefore, going to pay him a Viſit at *Elton* in *Huntingdonſhire*, I took it along with me; and having ſoftened a Bone therein in a very ſhort Space, he was deſirous to know the ſhorteſt Time it was poſſible to ſoften a Bone in: I told him, I thought I could ſoften the Marrow-bone of an Ox in a very few Minutes, but that that Veſſel was very weak, and I feared would not endure the Preſſure of ſo violent a Heat; yet ſeeming deſirous to have the Experiment tried, I ſaid I was ready to venture my Veſſel: Then having fixed all things right, and included about a Pint of Water, and, I believe, about ℥ij of a Marrow-bone, we placed the Veſſel horizontally betwixt the Bars of the iron Grate into the Fire about half way; and in three Minutes time I found it raiſed to a great Heat; whereupon I had a mind to have taken it out of the Fire, leſt it ſhould have burſt; telling Sir *Thomas* of the Danger that I apprehended: For I remember'd, that the Screws of a Digeſter, made after Mr. *Papine*'s Method, giving way, the Head flew one way and the Screws and Irons another, with ſuch Violence, that the Head, having hit againſt a Brick, cut a Piece clearly out of it; which was one Reaſon and Motive to my contriving a Digeſter this way, that the Screws cannot poſſibly ſtart, but that the Veſſel would ſooner break in any other Part: But in this (I added) I thought the Bottom would firſt burſt, it being only ſoldered in. Scarce had I done ſpeaking, and Sir *Thomas* thereupon moved his Chair to avoid Danger; but ſeeing the Heat become more raging, I ſtepp'd to the Side-table for the Iron wherewith I managed the Digeſter, in order to take it out of the Fire, when, on a ſudden, it burſt as if a Muſquet had gone off. A Maid that was gone a milking, heard it at a conſiderable Diſtance; the Servants ſaid it ſhook the Houſe. As I had foretold, the Bottom of the Veſſel, that was in the Fire, gave way; the Blaſt of the expanded Water blew all the Coals out of the Fire all over the Room; for the Back of the Fire-range was made juſt like an Oven, ſo that circulating therein, it brought forth all the Coals at the Mouth thereof. All the Veſſel together flew in a direct Line croſs the Room, and hitting the Leaf on a Table

made

made of an inch Oak plank, broke it all in Pieces, and rebounded half way of the Room back again. What ſurpriſed me in this Event was, that the Noiſe it made at its burſting was by no means like the ſucceſſive evaporating of an Æolipile, but like the firing off of Gunpowder. Nor could I perceive anywhere in the Room the leaſt Sign of Water, though I looked carefully for it, and, as I ſaid before, I had put a Pint into the Digeſter, ſave only that the Fire was quite extinguiſhed, and every Coal belonging to it was black in an Inſtant.

But to confirm the Elaſticity of Water, or to ſhew, at leaſt, that there is a much ſtronger elaſtic Force in Water and Air, when jointly included in a Veſſel, than when Air alone is incloſed therein, I made the following Experiment: I took two ℥vj Phials, into the one I put about ℥v of Water, or better, and ſo corked it as well as I poſſibly could; the other I corked in the ſame Manner, without putting any thing into it. I incloſed them both in my new Digeſter, Four-fifths being filled with Water; when the Heat was raiſed to about Five-ſeconds, I heard a conſiderable Exploſion, and a jingling of Glaſs within the Veſſel, and ſhortly after another Exploſion, but not ſo loud as the former; whence I concluded, that both the Phials were broken. I then let the Digeſter cool leiſurely, and the next Day I opened it; both the Corks were ſwimming on the Top of the Water, but only one of the Phials was broken, *viz.* that one into which I had not put any Water. At firſt, indeed, I concluded, that the Preſſure or Dilatation of the Air in the empty Phial being ſtronger than the ambient Preſſure, forced forth the Cork, whereupon the Water, ruſhing in with Violence, might break the Phial; and therefore that this was the Cauſe alſo of the Loudneſs of the Exploſion; whereas the other being moſtly filled with Water, there being but a ſmall Quantity of Air therein, juſt enough to force out the Cork, the Phial was not broken, but was preſerved by the Force of the Water incloſed therein. But I have had Reaſon ſince to change my Opinion; for having had very ſtrong Phials made, on Purpoſe to make ſome peculiar Experiments therewith, I took one of them, and having filled it about a quarter full with Water, and corked it very well, I ſet it in a ſquare iron Frame, with a Screw to ſcrew down the Cork, and keep it from flying forth. I then put it into a Digeſter, Four-fifths filled with Water; which being heated to a due Height, when I opened it, I found the Cork forced into the Phial, though the Cork was ſo very large, that it amazed ſeveral who ſaw it, to conceive how it was poſſible for ſo large a Cork to be forced into the Bottle. Hence it manifeſtly appears, that the Preſſure in the Digeſter, wherein was proportionately more Water, and leſs Air, was ſtronger than the Preſſure within the Phial, wherein was proportionately more Air, and leſs Water. Then I reaſon'd thus alſo of the two former Phials: That the Air in the Phial, wherein was no Water included, making not a proportionate Reſiſtance to the ambient Preſſure in the Digeſter, wherein was a conſiderable Quantity of Water, the Cork was forced inward with ſuch Violence, that it, together with the Water, daſhed the Phial in pieces; but that in the other Phial, wherein there were Five-ſixths of Water, the inward

inward Preſſure in the Phial being greater than the ambient Preſſure in the Digeſter, wherein were but Four-fifths of Water, the Cork was thereby forced outward; and that the ſmall Difference between the proportionate Quantity of Water and Air in the Phial and in the Digeſter, being only as Four-fifths to Five-ſixths, was the Reaſon not only why the Bottle was not broken, but alſo of the Faintneſs of the Explosion.

III. *Part of a Letter from* John Green, *M. D. Secretary of the* Gentlemens Society *at* Spalding *in* Lincolnſhire, *to* C. Mortimer, *M. D. Sec.* R. S. *ſerving to incloſe a Relation of a* Girl *three Years old, who remained a Quarter of an Hour* under Water *without drowning.*

SIR, *Spalding, Feb.* 18. 1737-8.

THE incloſ'd is what I receiv'd this Day from a Gentleman who lives on the Spot, and what you in yours ſo much deſir'd. The Reaſon of the Child's being able to abide ſo long under Water is pretty evident: The Child, moſt likely, was infirm, weak, and ſickly, from the Time of her Birth, ſo that the *Foramen Ovale* was not grown up. I remember about three Years ago to have ſeen a Subject, an old Woman 80 Years old, who had the *Foramen Ovale* ſo large, that you might eaſily thruſt your middle Finger through it; but ſhe was attended with the above-